

What is claimed is:

1. A pattern formation device comprising:
  - a mold for forming a predetermined pattern on a substantially plate-like substrate to be a processing object;
  - a heating unit heating said mold;
  - a substrate holding unit holding said substrate; and
  - a press mechanism pressing said mold against said substrate held by said substrate holding unit.
2. The pattern formation device according to claim 1, wherein said mold heated by said heating unit is pressed against said substrate by said press mechanism to heat said substrate to a temperature close to, equal to or higher than the glass transition temperature thereof, and a predetermined pattern is formed on said substrate with said mold.
3. The pattern formation device according to claim 1, wherein said substrate holding unit comprises a temperature maintaining unit keeping said substrate held by said substrate holding unit at a temperature equal to or lower than the glass transition temperature thereof.
4. The pattern formation device according to claim 1, wherein said heating unit comprises a controller controlling the temperature of said mold, and
  - said controller performs control so that said mold is held at a temperature lower than the glass transition

temperature of said substrate in a state in which said mold and said substrate are separated from each other, and said mold is held at a temperature close to, equal to or higher than the glass transition temperature of said substrate in a state in which said mold is pressed against said substrate.

5. The pattern formation device according to claim 1, further comprising a cooling unit cooling said mold.

6. The pattern formation device according to claim 1, further comprising a substrate heating unit heating said substrate held by said substrate holding unit.

7. The pattern formation device according to claim 1, wherein said press mechanism switches the amount of press of said mold against said substrate in a plurality of levels,

heat of said mold heated by said heating unit is transmitted to said substrate when the amount of press of said mold against substrate is a first amount of press, and

a pattern is formed on said substrate with said mold when the amount of press of said mold against said substrate is a second amount of press different from said first amount of press.

8. The pattern formation device according to claim 1, wherein said mold forms a pattern on only the surface area of said substrate.

9. A pattern formation device comprising:

a mold for forming a predetermined pattern on a processing object;

an object holding unit holding said processing object;

a press mechanism pressing said mold against said processing object held by said processing object holding unit;  
and

a heating means heating either one of said processing object and said mold which has a heat capacity smaller than the other.

10. The pattern formation device according to claim 9, further comprising a movement mechanism moving said mold and/or said processing object so that said mold faces a plurality of regions of said processing object held by said object holding unit; wherein said heating means heats said mold.

11. The pattern formation device according to claim 9, wherein in said heating means, the temperature of said mold is varied within a range which is based on a temperature at which said processing object is softened, according to timing in which said mold is pressed against said processing object by said press mechanism.

12. The pattern formation device according to claim 9, wherein said press mechanism further comprises a load controller

controlling a load applied from said mold to said processing object, and

said load controller applies a first load and a second load different from said first load one after another from said mold to said processing object.

13. The pattern formation device according to claim 9, wherein said heating means uses a ceramic heater.

14. The pattern formation device according to claim 9, wherein said pattern formation device further comprises a mold holding unit holding said mold and connected to said press mechanism, and

said mold holding unit is in surface contact with said mold and holding said mold by an electrostatic force.

15. A pattern formation method for forming a predetermined pattern on a substrate with a mold, comprising:

a heating step of heating said mold to a predetermined temperature based on the glass transition temperature of said substrate; and

a pattern forming step of pressing said mold against said substrate to form said pattern.

16. The pattern formation method according to claim 15, further comprising a cooling step of cooling said mold to a predetermined temperature equal to or lower than the glass

transition temperature of said substrate after pressing said mold against said substrate; and a mold removing step of separating said cooled mold from said substrate, wherein a step comprising said heating step, said pattern forming step, said cooling step and said mold removing step is repeatedly carried out for each of a plurality of regions of said processing object.

17. The pattern formation method according to claim 15, further comprising a heat transmitting step of transmitting heat of said mold to said substrate prior to said pattern forming step.

18. A pattern formation system comprising:

- a pattern formation device forming a predetermined pattern on a substantially plate-like substrate to be a processing object; and

- a feeding device feeding said substrate to said pattern formation device and taking out the same,

- said pattern formation device comprising:

- a mold for forming a predetermined pattern on said substrate;

- a heating unit heating either one of said substrate and said mold which has a heat capacity smaller than the other;

- a substrate holding unit holding said substrate; and

a press mechanism pressing said mold against said substrate held by said substrate holding unit.

19. The pattern formation system according to claim 18, wherein said pattern formation system further comprises a magazineholdingunit holding a magazine containing a plurality of said substrates, and

said feeding device takes out said substrates one by one from said magazine held by said magazine holding unit, and feeds the same to said pattern formation device.

20. The pattern formation system according to claim 19, wherein said magazine holding unit can hold a plurality of said magazines.